WHAT IS CLAIMED IS:

1. A catalyst system which consists essentially of (a) an organolithium compound, (b) a calcium alkoxide and (c) a lithium alkoxide.

2. A catalyst system as specified in claim 1 wherein the molar ratio of the lithium alkoxide to the calcium alkoxide is within the range of about 1:1 to about 20:1.

3. A catalyst system as specified in claim 4 wherein the molar ratio of the alkyl lithium compound to the calcium alkoxide is within the range of about 1:1 to about 6:1.

4. A catalyst system as specified in claim 5 wherein the calcium alkoxide is selected from the group consisting of calcium dimethoxide, calcium diethoxide, calcium diisopropoxide, calcium di-n-butoxide, calcium di-sec-butoxide, calcium di-t-butoxide, calcium di(1,1-dimethylpropoxide), calcium di(1,2-dimethyl-propoxide), calcium di(1,1-dimethylbutoxide), calcium di(1,10-dimethylpentoxide), calcium di(2-ethyl-hexanoxide), calcium di(1-methylheptoxide), calcium diphenoxide, calcium di(p-methylphenoxide), calcium di(p-octylphenoxide), calcium di(p-nonylphenoxide), calcium di(p-dodecylphenoxide), calcium di(α-naphthoxide), calcium di(ß-naphthoxide), calcium (o-methoxyphenoxide), calcium (o-methoxyphenoxide), calcium di(m-methoxyphenoxide), calcium di(p-methoxy-phenoxide), calcium (o-ethoxyphenoxide) and calcium (4-methoxy-1-naphthoxide) and calcium tetrahydrofurfurylate.

5. A catalyst system as specified in claim 6 wherein the organolithium compound is an organomonolithium

compound.

6. A catalyst system as specified in claim 7 wherein the molar ratio of the lithium alkoxide to the calcium alkoxide is within the range of about 5:2 to about 10:1.

7. A catalyst system as specified in claim 8 wherein the molar ratio of the alkyl lithium compound to the calcium alkoxide is within the range of about 3:2 to about 4:1.

8. A catalyst system as specified in claim 9 wherein the lithium alkoxide is made by reacting an organolithium compound, metallic lithium or lithium hydride with an alcohol selected from the group consisting of methanol, ethanol, normal-propyl alcohol, isopropyl alcohol, t-butanol, sec-butanol, cyclohexanol, octanol, 2-ethylhexanol, p-cresol, m-cresol, nonyl phenol, hexylphenol, tetrahydrofuryl alcohol, furfuryl alcohol, 3-methyltetrahydrofurfuryl alcohol, oligomer of tetrahydrofurfuryl alcohol, ethylene glycol monophenyl ether, ethylene glycol monobutyl ether, N,N-dimethylethanolamine, N,N-diethylethanolamine, N,N-dibutylethanolamine, N,N-diphenylethanolamine, N-methyldiethanolamine, N-ethyldiethanolamine, N-butyldiethanolamine, N-phenyldiethanolamine, N,N-dimethylpropanolamine, N,N-dibutylpropanolamine, N-methyldipropanolamine, N-ethyldipropanolamine, 1-(2-hydroxyethyl)pyrrolidine, 2-methyl-1-(2-hydroxyethyl)pyrrolidine, 1-piperidineethanol, 2-phenyl-1-piperidineethanol, 2-ethyl-1-piperidinepropanol, N-ß-hydroxyethylmorpholine, 2-ethyl-N-8-hydroxyethylmorpholine, 1-piperazineethanol, 1-piperazinepropanol, N,N'bis(ß-hydroxyethyl)piperazine, N,N'-bis(Y-hydroxypropyl)-

piperazine, 2-(ß-hydroxyethyl)pyridine and 2-(γ-hydroxypropyl)pyridine.

9. A catalyst system as specified in claim 10 wherein the organolithium compound is selected from the group consisting of ethyl lithium, isopropyl lithium, n-butyllithium, sec-butyllithium, tert-octyl lithium, phenyl lithium, 2-naphthyllithium, 4-butylphenyllithium, 4-tolyllithium, 4-phenylbutyllithium, cyclohexyl lithium and hexyl lithium.

10. A catalyst system as specified in claim 11 wherein the molar ratio of the lithium alkoxide to the calcium alkoxide is within the range of about 3:1 to about 5:1.

11. A catalyst system as specified in claim 12 wherein the molar ratio of the alkyl lithium compound to the calcium alkoxide is within the range of about 2:1 to about 3:1.

12. A catalyst system which consists essentially of (a) an organometallic compound of a metal selected from the group consisting of lithium, potassium, magnesium, sodium, aluminum, zinc and tin, (b) a calcium compound and (c) a lithium alkoxide.

13. A catalyst system as specified in claim 21 wherein said calcium compound is selected from the group consisting of calcium carboxylates, calcium phenolates, calcium amines, calcium amides, calcium halides, calcium nitrates, calcium sulfates, calcium phosphates, calcium alcoholates and calcium ditetrahydrofurfurylate.

14. A catalyst system as specified in claim 22

wherein said organometallic compound is selected from the group consisting of organolithium compounds, organopotassium compounds, organomagnesium compounds and organosodium compound.

15. A catalyst system as specified in claim 23 wherein the calcium compound is selected from the group consisting of calcium alcoholates, calcium carboxylates and calcium phenolates.

16. A catalyst system as specified in claim 24 wherein the organometallic compound is an organolithium compound.

17. A catalyst system as specified in claim 23 wherein the calcium compound is a calcium alcoholate.

18. A catalyst system as specified in claim 21 wherein the molar ratio of the lithium alkoxide to the calcium compound is within the range of about 2:1 to about 20:1; and wherein the molar ratio organometallic compound to the calcium compound is within the range of about 1:1 to about 6:1.

19. A catalyst system as specified in claim 22 wherein the molar ratio of the lithium alkoxide to the calcium compound is within the range of about 5:2 to about 10:1; and wherein the molar ratio organometallic compound to the calcium compound is within the range of about 3:2 to about 4:1.

20. A catalyst system as specified in claim 23 wherein the molar ratio of the lithium alkoxide to the calcium compound is within the range of about 3:1 to about

5:1; and wherein the molar ratio organometallic compound to the calcium compound is within the range of about 2:1 to about 3:1.

21. A process for the preparation of a calcium alkoxide which comprises reacting calcium hydroxide with an alcohol at a temperature which is within the range of about 150°C to about 250°C to produce the calcium alkoxide.

22. A process as specified in claim 35 wherein the reaction is carried out in the presence of an excess of the alcohol.

23. A process as specified in claim 36 wherein the alcohol is of the formula ROH wherein R represents a moiety selected from the group consisting of 2-ethylhexyl groups, nonylphenyl groups, dodecylphenyl groups, tetrahydrofurfuryl groups and furfuryl groups.

24. A process as specified in claim 37 which further comprises removing the excess alcohol by distillation after the completion of the reaction.

25. A process as specified in claim 38 wherein said reaction is carried out at a temperature which is within the range of about 175°C to about 200°C.

26. A process as specified in claim 38 herein said reaction is carried out at a temperature which is above the boiling point of the alcohol.

27. A process as specified in claim 40 which further comprises recovering the calcium alkoxide by

dissolving it in an organic solvent.

28. A process as specified in claim 41 wherein the organic solvent is selected from the group consisting of ethyl benzene, toluene and xylene.

29. A process as specified in claim 1 wherein said catalyst system is further comprised of an amine.